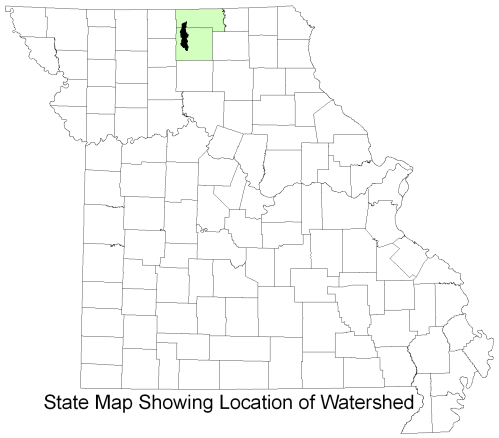
Missouri Department of Natural Resources

Total Maximum Daily Load Information Sheet

West Fork Locust Creek

Water Body Segment at a Glance:


State Map Showing Location of Watershed

County: Sullivan
Nearby City: Humphreys
Length of impaired segment: 17 miles
Pollutant: Unknown
Source: None given
Water Body ID: 613

TMDL Priority Ranking: Medium
Scheduled for TMDL development: 2010

Description of the Problem

Beneficial uses of West Fork Locust Creek

- Livestock and Wildlife Watering
- Protection of Warm Water Aquatic Life
- Protection of Human Health (Fish Consumption)

Use that is impaired

- Protection of Warm Water Aquatic Life

Standards that apply

- All water bodies in Missouri are protected by the general criteria contained in Missouri's Water Quality Standards, 10 CSR20-7.031(3). These narrative criteria do not contain specific numeric limits. Some general criteria that might apply are (3)(A), (C), (D) and (G):

  - Waters shall be free from substances in sufficient amounts to cause the formation of putrescent, unsightly or harmful bottom deposits or prevent full maintenance of beneficial uses.
  - Waters shall be free from substances in sufficient amounts to cause unsightly color or turbidity, offensive odor, or prevent full maintenance of beneficial uses.
  - Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life.
  - Waters shall be free from physical, chemical or hydrologic changes that would impair the natural biological community.

Background information and water quality data

West Fork Locust Creek is one of ten streams initially listed on Missouri's 2002 303(d) list as being impaired by unknown pollutants. The U.S. Environmental Protection Agency (EPA) based these initial listings on the department's revised "Monitoring Report on 26 Waters" and visual/benthic low flow

surveys. Specific reasons cited for listing these various streams include the presence of dense filamentous algae or duckweed, rocks darkened by manganese (indicates a daily oxygen sag), the presence of pollution tolerant aquatic invertebrate species, anoxic (lacking oxygen) sediments, reduced biodiversity, and high specific conductance (indicating excessive dissolved minerals).

The department completed a biological assessment and habitat study for West Fork Locust Creek in fall 2007 and spring 2008 and determined the aquatic macroinvertebrate[1] community was impaired. However, it was unclear if drought followed by unusually wet conditions contributed to the lack of organisms. This impairment may also be due to rural nonpoint sources.

In order to meet the milestones of the 2001 Consent Decree, *American Canoe Association, et al. v. EPA*, No. 98-1195-CV-W in consolidation with No. 98-4282-CV-W, February 27, 2001, the EPA is establishing a total maximum daily load (TMDL) that addresses sediment and the nutrients nitrogen and phosphorus as pollutants of concern. Water quality targets used to develop the TMDL are based on a total suspended solids target of 5.75 mg/L as a surrogate for sediment, and total nitrogen and phosphorus targets of 0.855 mg/L and 0.092 mg/L respectively (see Figures 1 – 3).

Potential nonpoint sources contributing to the impairment in the West Fork Locust Creek include runoff from agricultural areas, runoff from urban areas, onsite wastewater treatment systems, and various sources associated with riparian habitat conditions. Nutrients within the watershed may be attributed to fertilizer or manure application to the agricultural lands being utilized for pasture, hay, or crop production. Of particular concern are lands near the riparian[2] buffer areas that are subject to livestock grazing or watering and fertilizer applications. The animal wastes from manure applications, for both confined and unconfined feeding sites are considered a major potential source of nutrient loading going into West Fork Locust Creek.

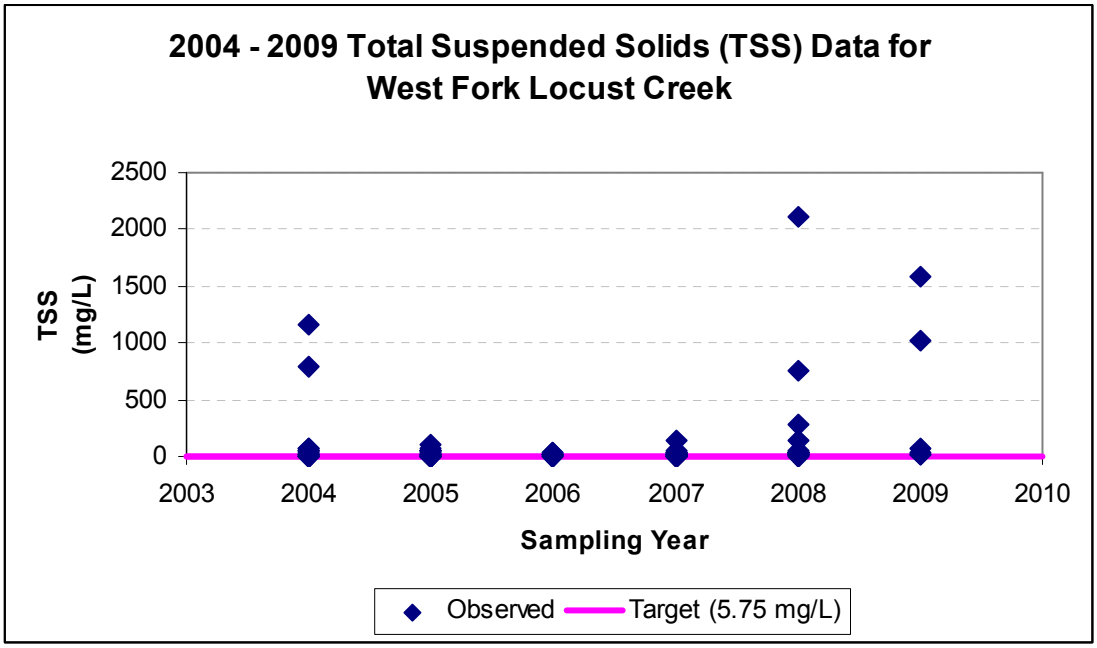


Figure 1

[1] Macroinvertebrates are organisms that are large (macro) enough to be seen with the naked eye and lack a backbone (invertebrate).

[2] A riparian buffer (or corridor) is the linear strip of land running adjacent to a stream bank.

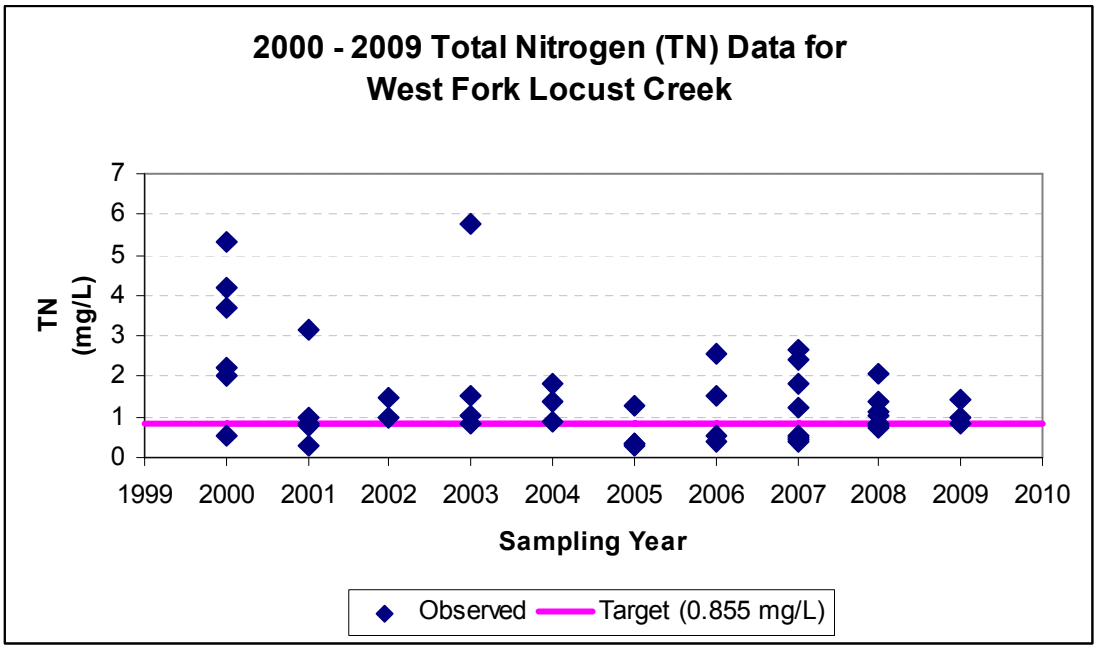


Figure 2

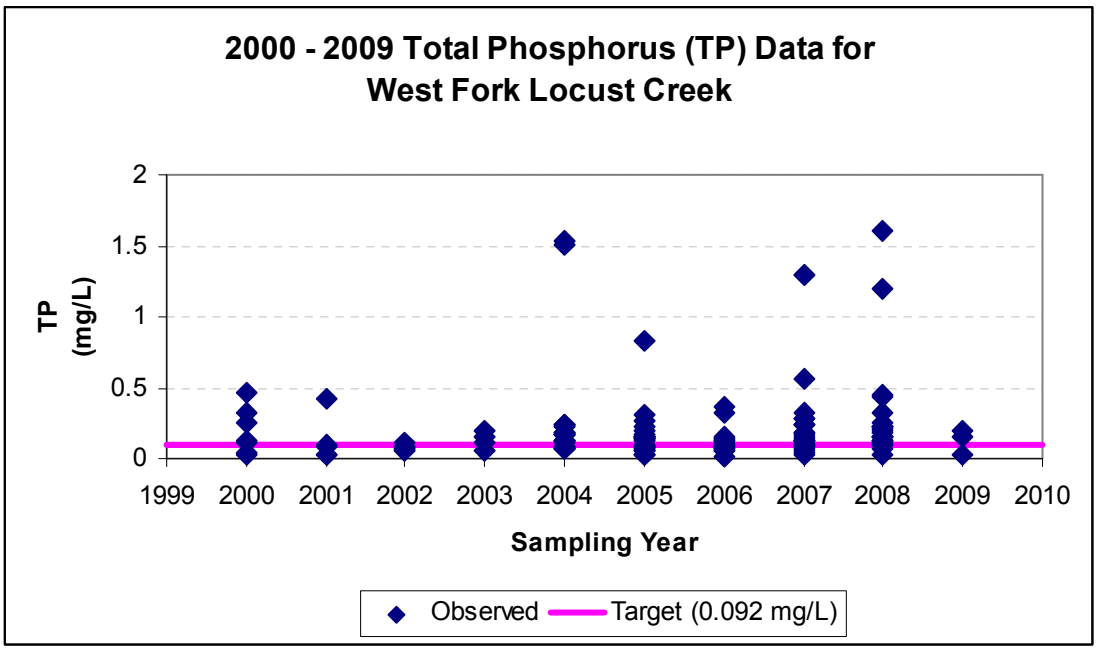
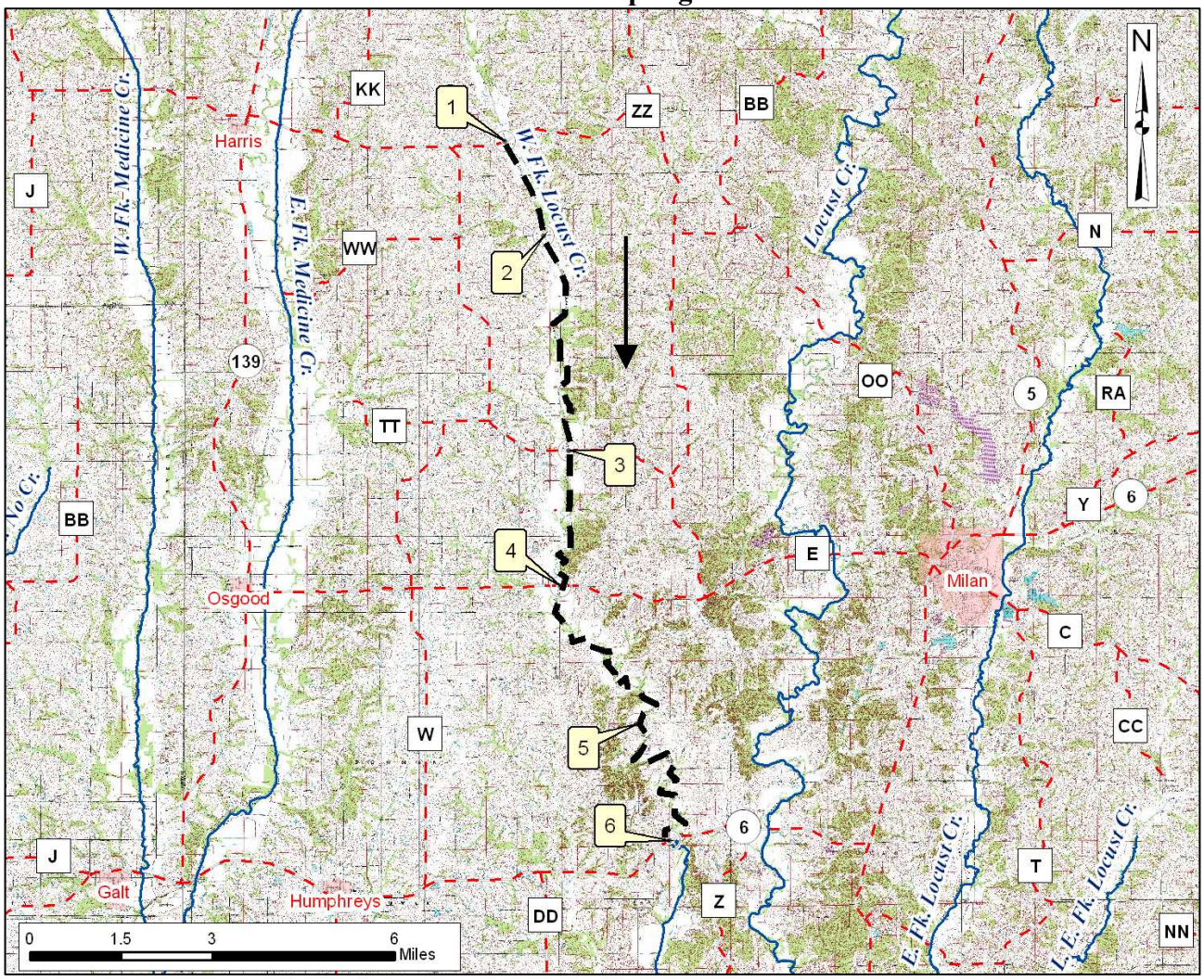


Figure 3

Map showing the impaired segment of West Fork Locust Creek in Sullivan County, Mo., and sampling sites



Impaired Segment → Direction of flow

Sample Sites

1 – W Fk Locust Creek at State Highway ZZ
2 – W Fk Locust Creek downstream of Maple Rd.
3 – W Fk Locust Creek at State Highway E
4 – W Fk Locust Creek at State Highway PP
5 – W Fk Locust Creek at Sunset Rd
6 – W Fk Locust Creek at State Highway 6

For more information call or write:

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